

QUALITY ASSURANCE/QUALITY CONTROL PLAN  
for  
COLBERT LANDFILL  
COLBERT, WASHINGTON

August 21, 1990

Prepared By:

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Prepared For:

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Approvals:

Project Officer: _____	Date _____
QA Officer: _____	Date _____
Regional Sample Control Center (RSCC): _____	Date _____

USEPA SF



1503792



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FAX FOR ECOLOGY  
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pyrene

fluoranthene

chrysene

~~benzo~~ Anthracenes

acenaphthene

phenanthrene<sup>ene</sup>  
~~anthracene~~



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## QUALITY ASSURANCE/QUALITY CONTROL PLAN

Pursuant to U.S. Environmental Protection Agency (EPA) Contract Number 68-W9-0020 and Work Assignment Number 20-05-0P15, Ecology and Environment, Inc. (E & E) is conducting field operations at the Colbert Landfill located in Colbert, Washington. Field operations to be conducted at the site are in support of EPA remedial oversight, and shall be limited to the collection of approximately two split samples from existing monitoring wells and one field, split triplicate sample.

### Project Organization and Responsibility

The following is a list of key project personnel and their responsibilities:

E & E Program Manager: Ronald Karpowicz, San Francisco  
E & E Project Manager: Lyle Diediker, Seattle  
E & E Field Operation: E & E  
E & E Data Validation Review: E & E  
EPA Remedial Project Manager: Neil Thompson, Superfund, Seattle  
EPA Project Officer: Sue McCarthy, Seattle  
EPA QA Officer: Bruce Woods, Quality Assurance Office, Seattle

### Project Codes and Sample Numbers

Project Code: \_\_\_\_\_ Account Code: \_\_\_\_\_  
Laboratory Designated: EPA \_\_\_\_\_ CLP \_\_\_\_\_  
EPA Sample Numbers Assigned: From \_\_\_\_\_ To \_\_\_\_\_  
Storet Numbers Assigned: From \_\_\_\_\_ To \_\_\_\_\_  
Case Number \_\_\_\_\_ SAS Number \_\_\_\_\_

## Project Description

### 1. Site Description

Colbert Landfill is an inactive 40-acre site located approximately 2.5 miles north of the city of Colbert in Eastern Washington. The landfill was operated until 1986. Groundwater migrating from the site has been shown to contain chlorinated organic solvents. Following an initial investigation of the groundwater in the area, the USEPA placed the Colbert Landfill on its NPL in August 1983. EPA's Record of Decision (ROD) was released for public comment in September 1987. Negotiation of the Consent Decree occurred in 1989 between EPA, Ecology, Spokane County, and Key Tronic. Phase I of the remedial action is designed to provide characterization of contaminant distribution, site hydrogeology, and provide engineering parameters for the final remedial design. Phase I includes the installation and sampling of twelve monitoring wells located in the site's west area.

### 2. Objective and Scope

Spokane County Utilities Department (county), through their contractor, Landau Associates, Inc., has recently completed the west system groundwater pumping well (CP-W1) and its associated monitoring well (CD-47). Initial sampling of these wells is scheduled to begin on August 22, 1990. EPA has requested that E & E collect a series of split samples primarily designed to establish accuracy and precision, thereby allowing an unequivocal analytical comparison to the Landau analysis. One rinsate blank will also be collected in order to ensure that the non-dedicated sampling pumps to be used by the county (Landau) undergo proper decontamination between sampling stations.

### 3. Schedule of Tasks and Milestones

<u>Activities</u>	<u>Dates</u>
Quality Assurance/Quality Control Plan	August 18, 1990
Fieldwork	August 22, 1990
Sample Analysis	August 23- September 27, 1990
Data Validation Review	September 27- October 11, 1990

### 4. Data Usage

Sample results will be used to determine the concentration of VOA contaminants in the two wells, having a range of medium to high contaminant concentrations, and also include the precision and accuracy necessary to establish the true concentrations of the contaminants. The results will allow an unequivocal comparison of Landau results to be made. The results will also be used to determine if proper sampling equipment decontamination methods had been employed.

Evaluation of the sampling procedures will include observation of groundwater sampling activities and comparison of these observations with the sampling requirements of the Colbert Landfill Remedial Design/ Remedial Action Quality Assurance Project Plan.

### 5. Monitoring Network/Sample Collection Design and Rationale

Split samples will be collected from CD-47 and CP-W1 in a manner identical to the protocol implemented by Landau. The samples to be collected, and collection design requirements and rationale, are summarized in Table 1.

TABLE 1

Sample Designation	QA/QC Samples	Laboratory	Analytes <sup>a</sup>
CD-47	MS/MSD	CLP	Volatile Organics
CP-W1 (duplicate)		CLP	Volatile Organics
CL-TB-1	Trip Blank	CLP	Volatile Organics
CL-RB-1	Rinsate Blank	CLP	Volatile Organics

Total No. of Samples	Sample Matrix	Analytical Parameter	Sample Preservation	Sample Container	Holding Time	QC Samples
6	Water	VOA	HCl/ice	(2) 40 ml	14 days	3

<sup>a</sup> USEPA Contract Laboratory Statement of Work for Volatile Organic Analysis (IFB WA87-K-236 to 238 Revision 2/88)--Contract Required Quantitation Limits.

## Data Quality Objectives

### 1. Precision and Accuracy Protocols/Limits

Precision reflects the reproducibility of measurements under a given set of conditions. Precision will be expressed as relative percent difference (RPD). Accuracy reflects the bias in a measurement system. It will be expressed as percent recovery.

<u>Variable</u>	<u>Precision (RPD)</u>	<u>Accuracy (% Recovery)</u>
VOA	+/- 20%	70-130%

### 2. Data Representativeness

Data representativeness express the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at sampling point, or an environmental condition. Representativeness will be assessed by a collection and analysis of two blind field split samples from well CP-W1.

### 3. Data Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. There will be no performance or reference sample analyzed.

### 4. Data Completeness

Data completeness is defined as the percentage of measurements made that are judged to be valid measurements. A completeness of 90% will be determined as being acceptable.

## 5. Method Blanks and Matrix Spike Sample

Method blanks will be analyzed at a frequency of one per set by the laboratory for all variables. A matrix spike and matrix spike duplicate (MS/MSD) sample will be collected at monitoring well CD-47. Each MS/MSD sample will be comprised of two additional 40-ml VOA bottles. For each analytical variable, MS/MSD samples will be spiked at a concentration of 10 x detection level or 20 x native concentration.

### Sample Procedure

Landau will be collecting the groundwater samples. Samples from wells CD-47 and CP-W1 will be collected using a Bennett non-dedicated sample pump. Samples will be collected directly from the pump. Pumps will be decontaminated by flushing distilled water through the pump prior to sampling. E & E will collect one rinsate blank from the Bennet pump after decontamination.

### Sample Custody Procedures

Sample custody and documentation will conform to those specified in U.S. EPA, NEIC, Enforcement Consideration for Evaluation of Uncontrolled Hazardous Waste Disposal Sites, April 1980.

### Calibration Procedures and Preventive Maintenance

Calibration procedures and preventive maintenance will be performed by Landau.

### Laboratory Data Reduction/QA Review

Laboratory data reduction will be performed by the laboratory conducting the analyses, and the resulting data set will be forwarded to the Project Officer. The data will be checked by the laboratory for precision and accuracy. If the data are outside of acceptable limits,

samples must either be reanalyzed or be considered for corrective actions. Sufficient information using CLP deliverables should be delivered to permit a third party validation using the USEPA's functional guidelines for data validation.

#### Field Data Reduction/QA Review

Field measurements will be recorded in a field notebook and checked by other field personnel.

#### Analytical Methods (including QC checks)

Volatile organics shall be analyzed using EPA Method 524.2.

#### Data Assessment

Data assessment will be conducted by Region X QA Officer. Data validation review will be conducted by an E & E chemist.

#### Corrective Action

If required, a corrective action checklist and/or sample alteration checklist will be completed (see attachments).

#### Reports

Ecology and Environment will generate a data review and validation report. This QA report will be submitted to the Project Officer.

#### QA Report to Management

The QA report must be submitted to the Project Officer within three weeks of receiving the data from the laboratory.

Site Safety

All fieldwork will be conducted in accordance with the existing Ecology and Environment safety plan for Colbert Landfill. Lyle Diediker (E & E) is the Site Safety Officer for this field effort.

**SAMPLE ALTERATION CHECKLIST**

Project Name and Number:

Material to be Sampled:

Measurement Parameter:

Standard Procedure for Field Collection and Laboratory Analysis:  
(cite references)

Reason for Change in Field Procedure or Analytical Variation:

Special Equipment, Material, or Personnel Required:

Initiator's Name:	_____	Date	_____
Project Approval:	_____	Date	_____
Laboratory Approval:	_____	Date	_____
QA Officer/Reviewer:	_____	Date	_____
Sample Control Center:	_____	Date	_____

CORRECTIVE ACTION CHECKLIST

Project Name and Number:

Sample Dates Involved:

Measurements Parameters:

Acceptable Data Range:

Problem Area Requiring Corrective Action:

Measures Required to Correct Problem:

Means of Detecting Problems and Verifying Correction:

Initiator's Name:	_____	Date	_____
Project Approval:	_____	Date	_____
Laboratory Approval:	_____	Date	_____
QA Officer/Reviewer:	_____	Date	_____
Sample Control Center:	_____	Date	_____